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*DB=USPT,PGPB; PLUR=YES; OP=OR*

<u>L12</u>	L10 and freeze	0	<u>L12</u>
<u>L11</u>	L10 and (nonsolvent or non-solvent)	0	<u>L11</u>
<u>L10</u>	L9 not l6	52	<u>L10</u>
<u>L9</u>	L5 same (potassium adj nitrate)	54	<u>L9</u>
<u>L8</u>	L7 not l6	1	<u>L8</u>
<u>L7</u>	L5 and l2	3	<u>L7</u>
<u>L6</u>	L5 same l2	2	<u>L6</u>
<u>L5</u>	L4 same l1	76	<u>L5</u>
<u>L4</u>	phase adj stabilized or psan	623	<u>L4</u>
<u>L3</u>	L2 and l1	486	<u>L3</u>
<u>L2</u>	freeze adj (dry or drying or dried)	24490	<u>L2</u>
<u>L1</u>	ammonium adj nitrate	13682	<u>L1</u>

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L10 and freeze	0

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L12

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L6: Entry 1 of 2

File: PGPB

Jul 25, 2002

PGPUB-DOCUMENT-NUMBER: 20020098143

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020098143 A1

TITLE: Process for preparing phase-stabilized ammonium nitrate

PUBLICATION-DATE: July 25, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Sampson, William P.	Sparks	NV	US	
Astrauskas, Peter J.	Mesa	AZ	US	

US-CL-CURRENT: 423/396; 23/300, 23/302A, 423/266

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWC
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☒ 2. Document ID: US 20020096235 A1

L6: Entry 2 of 2

File: PGPB

Jul 25, 2002

PGPUB-DOCUMENT-NUMBER: 20020096235

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020096235 A1

TITLE: Process for preparing free-flowing particulate phase stabilized ammonium nitrate

PUBLICATION-DATE: July 25, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Blomquist, Harold R.	Gilbert	AZ	US	

US-CL-CURRENT: 149/46

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWC
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Terms	Documents
L9 not l6	52

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<u>L1</u>	ammonium adj nitrate	13682	<u>L1</u>

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L10: Entry 48 of 52

File: USPT

DOCUMENT-IDENTIFIER: US 5641938 A

TITLE: Thermally stable gas generating composition

Brief Summary Text (25):

Phase stabilization of ammonium nitrate by the inclusion of potassium salts, such as potassium nitrate and potassium perchlorate is known. PSAN containing 15% by weight potassium nitrate will successfully avoid the problematic phase changes and volume changes associated with pure AN.

Brief Summary Text (30):

It is a feature of the invention that the chemical mixture includes a mixture of nitroguanidine and ammonium nitrate in a ratio effective to produce deflagration rather than detonation on ignition. It is another feature of the invention that phase stabilized ammonium nitrate is used to prevent physical breakdown of the propellant on thermal cycling. In one embodiment, potassium nitrate is added to provide thermal stability up to 110.degree. C. In addition, it is a feature of the invention that the flame temperature is less than 2450K.

Brief Summary Text (42):

The preferred phase stabilized ammonium nitrate contains from about 5% to about 25% by weight potassium nitrate and more preferably from about 10% to about 15% by weight potassium nitrate.

Detailed Description Text (4):

A quantity of 10% potassium nitrate in a phase stabilized ammonium nitrate mixture (10% KN-PSAN) was prepared by co-precipitating ammonium nitrate with 10 weight percent potassium nitrate from an aqueous solution. After drying, the solid was ball milled to reduce particle size producing a fine granular material.

Detailed Description Text (11):

The linear burn rate of these pellets was measured at 6.9 MPa (1000 psi) and found to be 8.1 mm (0.32 inch) per second. Differential scanning calorimetry (DSC) measurements revealed no endotherms characteristic of ammonium nitrate phase transitions over the temperature range of 0.degree. C.-115.degree. C.; confirming incorporation of potassium nitrate into ammonium nitrate to form PSAN. Endotherms corresponding to the ammonium nitrate Phase III-to-II and the Phase II-to-I structural phase transitions occurred at approximately 120.degree. C. and 130.degree. C., respectively. The onset of AN melting occurred at approximately 165.degree. C. and the onset of an exotherm was approximately 245.degree. C.